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New records of the soldier flies of Morocco with a bibliographical inventory of the North African fauna (Diptera, Stratiomyidae)

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Abstract

A checklist of soldier flies species recorded from the North African countries of Morocco, Algeria, Tunisia, Libya, and Egypt is based on both literature records and material newly collected in Morocco. Four subfamilies (Stratiomyinae, Sarginae, Nemotelinae, and Pachygasterinae), and twelve species from five genera have been collected and are recognized in Morocco. *Pachygaster atra* (Panzer, 1798), *Oxycera pardalina* (Meigen, 1822), *Nemotelus danielssoni* (Mason, 1989), and *Oxycera terminata* (Meigen, 1822) are newly recorded to the North African fauna. *Nemotelus atriceps* (Loew, 1856) and *Nemotelus maculiventris* (Bigot, 1861) are reported for the first time in Morocco. The present number of soldier flies known from Morocco is 33.

Keywords

Algeria, Checklist, Egypt, Morocco, North Africa, Rif, Soldier Flies, Stratiomyidae, Tunisia

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Introduction

Stratiomyids (soldier flies) constitute one of the moderately large families of Diptera that exhibit an extreme array of morphological diversity, as well as a moderate range of life histories, with about 400 genera and about 2,700 species currently recognised worldwide (http://www.catalogueoflife.org/col/browse/tree/id/2bda68991ddbf2b55b5c7e66c8a125ad). The soldier flies are found all over the world, but are particularly diverse in tropical regions (Woodley 2001, 2011).

The family comprises varied members, ranging from 2.0 to 20.0 mm in length. While some species are entirely slender, others are stout or evidently flattened, with coloration ranging from strikingly patterned dark with a yellow, sometimes white or greenish pattern and frequent metallic reflections (Rozkošný 1997), to rather dull and concolourous dark brownish black (Figs 22, 23).

Important studies have been done over the world, like those of Rozkošný (1977, 1982, 1983, 1998, 2004) who specially studied the European Stratiomyidae, Rozkošný and Nartshuk (1988) who provided a catalogue of the soldier flies and Woodley (2001, 2011) who provided the world catalogue of the soldier flies.

To date, the soldier fly fauna of Morocco has been poorly investigated. The first records of Moroccan Stratiomyidae were given by Becker and Stein (1912) in their study of the Diptera of Morocco. For the next two decades, they received sporadic study devoted mainly, to the records of Moroccan species amongst the Diptera of Morocco or among the Stratiomyidae of the Palaearctic Region (Séguy 1930; Lindner 1936). Till now, no comprehensive and specific study has been published on Moroccan stratiomyids.

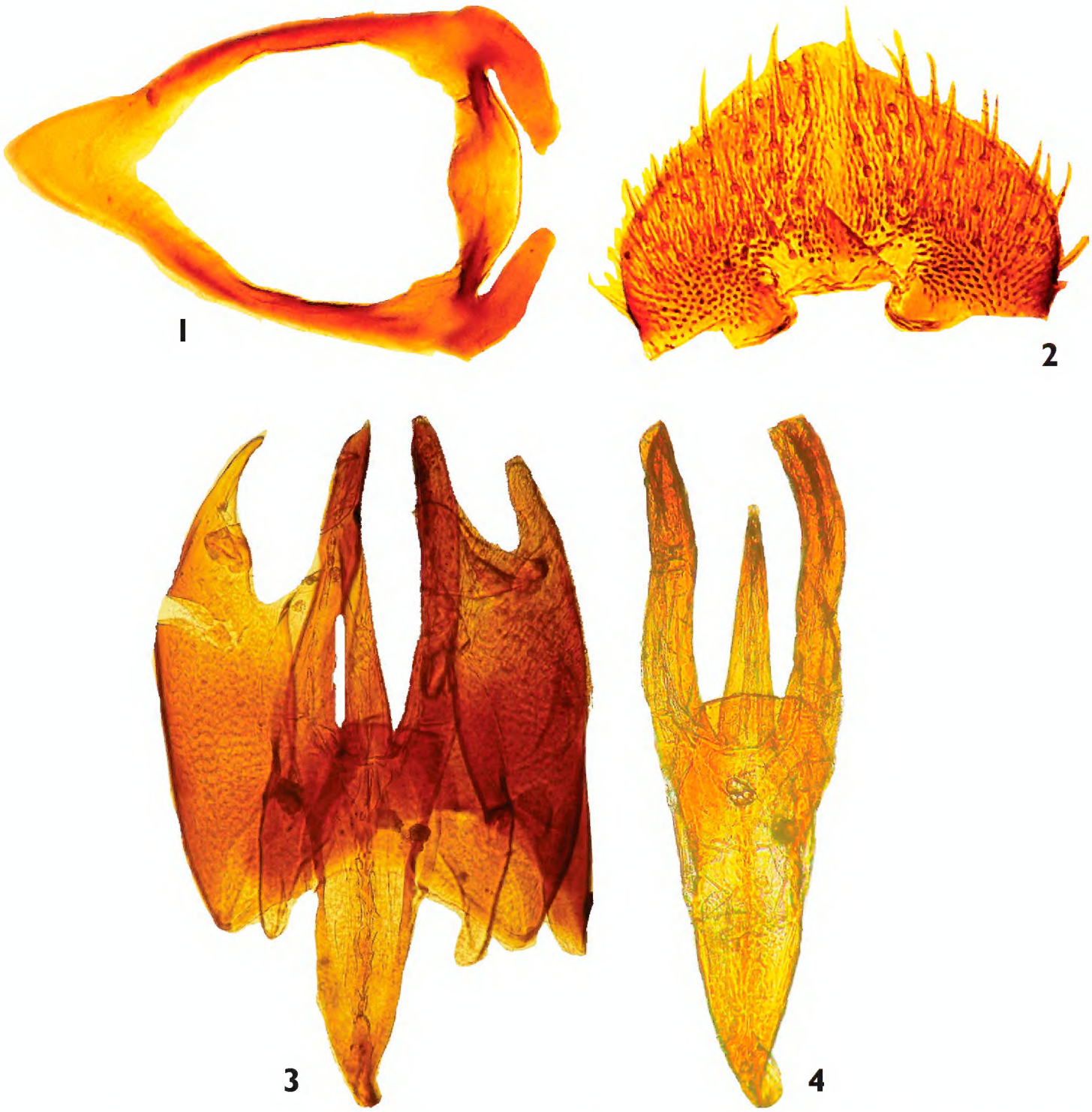
In this present study, 12 species of soldier flies have been recorded from 23 sampling sites in Morocco (Table 1), including a total of 83 specimens (47 males and 36 females). We report the first occurrences of the species *Nemotelus atriceps* (Loew, 1856) and *Nemotelus maculiventris* (Bigot, 1861) in Morocco, in addition to *Pachygaster atra* (Panzer, 1798), *Oxycera pardalina* (Meigen, 1822), *Oxycera terminata* (Meigen, 1822) and *Nemotelus danielssoni* (Mason, 1989) for the first time not only in Morocco but for the North African continent.

Materials and methods

Three techniques were used to collect Stratiomyidae: rearing larvae and pupae in the laboratory from collected substrates in the field following the technique used by Afzan and Belqat (2016), and collecting adults with both sweep net and malaise traps. Samples were collected by two authors (DY and BB) and the specimens were either micro-pinned or preserved in ethyl alcohol. Because specimens of the subfamily Nemotelinae are small, usually less than 5 mm in length, study and illustration of the male and/or female terminalia required use of a microscope. Observation of detailed structures of the male and/or female terminalia was sometimes needed to confirm species identification. Dissections of terminalia were prepared using the methods and

Table 1. Sampling sites (in alphabetical order) harbouring the species collected in Morocco with localities, geographical coordinates and altitudes.

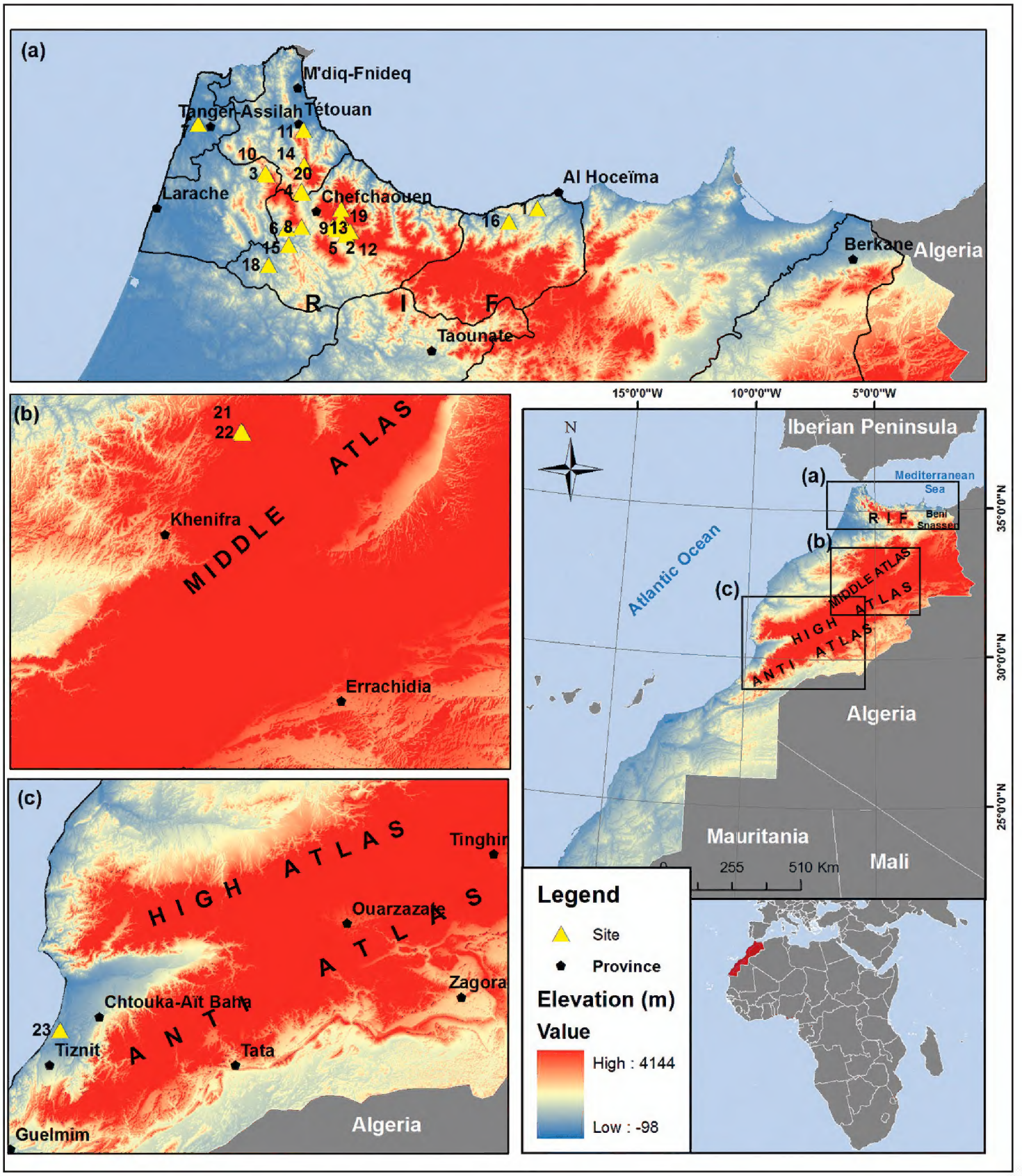
Site	Locality	Province	Altitude (m)	Geographical coordinates
Rif Mountains				
1. Affluent Tarmast	Parc National d'Al Hoceima	Al Hoceima	168	35°10.666'N/004°03.088'W
2. Aïn El Malâab	Parc National Talassemtane	Chefchaouen	1278	35°05.509'N/005°09.443'W
3. Aïn Sidi Brahim Ben Arrif	Route Moulay Abdessalam	Larache	897	35°20.398'N/005°32.712'W
4. Barrage Moulay Bouchta	Larbaa Beni Hassan	Tétouan	364	35°15.864'N/005°21.221'W
5. Cascade Chrafate	Chrafate	Chefchaouen	820	35°03.997'N/005°06.434'W
6. Daya Afrate	Tanaqoub	Chefchaouen	600	35°05.634'N/005°26.028'W
7. Daya Aïn Jdioui	Aïn Jdioui	Tanger-Assilah	5	35°34.074'N/005°55.499'W
8. Daya Mezine	Mezine	Chefchaouen	778	35°06.104'N/005°21.177'W
9. Daya Rmali	El Malâab, Parc National Talassemtane	Chefchaouen	1276	35°05.563'N/005°09.488'W
10. Daya Tazia	Route Moulay Abdessalam	Larache	721	35°20.814'N/005°33.139'W
11. Douar Kitane	Kitane	Tétouan	52	35°32.412'N/005°20.393'W
12. Lac Ametrasse	Chrafate	Chefchaouen	828	35°05.014'N/005°5.130'W
13. Oued Abou Bnar	Douar Abou Bnar, Parc National Talassemtane	Chefchaouen	1254	35°10.977'N/005°08.005'W
14. Oued Achekrade	Douar Aouzighen	Tétouan	642	35°22.931'N/005°20.364'W
15. Oued El Koub	Souk El Had	Chefchaouen	124	35°01.298'N/005°25.333'W
16. Oued Izelfane	Beni Boufrah	Al Hoceima	206	35°07.272'N/004°12.555'W
17. Oued Majjou (Hafa meqlouba)	Majjou	Chefchaouen	825	35°06.175'N/005°10.836'W
18. Oued Zandoula	15 km au Nord de Ouazzane	Ouazzane	108	34°55.707'N/005°31.942'W
19. Ruisseau Maison forestière	Parc National Talassemtane	Chefchaouen	1674	35°08.076'N/005°08.262'W
20. Taghbalout	Larbaa Beni Hassan	Tétouan	379	35°15.323'N/005°20.887'W
Middle Atlas Mountains				
21. Cascade Aïn Vittel	Aïn Vittel	Ifrane	1555	33°33.682'N/005°07.463'W
22. Mchacha Aïn Vittel	Aïn Vittel	Ifrane	1585	33°33.206'N/005°06.722'W
Anti Atlas Mountains				
23. Village Massa	Village Massa	Massa	24	29°59.353'N/009'38.708'W



Figures 1–4. *Nemotelus danielssoni* female and male terminalia: **1** Genital furca **2** Subgenital plate **3** Genital capsule with Aedeagal complex (dorsal view) **4** Genital capsule with Median process (lateral view).

equipment described by (Nagatomi and Iwata 1976), then transferred to 70% alcohol where the internal tissues were removed with fine forceps. After washing, the dissected genital parts were preserved in (1:10) a mixture of glycerine and ethyl alcohol for observation.

Preparations of the male and/or female terminalia, as well as the illustrations are given here (Figs 1–4). Species were recognised according to the identification keys of Séguy (1930, 1953), Rozkošný (1982, 1983) and Rozkošný (1977). A list of 23 sampling sites, with coordinates and altitudes, is presented in Table 1, and the locations of the sites are shown in Map 1, done using the logiciel GisArc (Geographic Informa-



Map 1. Map showing all sampling sites for soldier flies collected in this study in Morocco.

tion System, version 9.3). Photographs of the sampling localities showing Moroccan habitats of the species newly recorded are given (by DY and BB). All the material is deposited in the insect collection of the department of Biology, Faculty of Sciences, University Abdelmalek Essaâdi, Tétouan, Morocco.

The nomenclature and the list of the species known to North Africa follow the world Catalogue of the Stratiomyidae (Woodley 2001).

Table 2 summarises the species presently known from North Africa.

Table 2. The following checklist summarises the species of solider fly presently known from North Africa. Taxa are listed according to the classification scheme of Woodley (2001). Those species which are new records for North Africa are noted with (^) symbol, those new for Morocco are marked with (+), and the species which represent the new site in Morocco are with one asterisk (*).

Specimens	Morocco	Algeria	Tunisia	Libya	Egypt
Subfamily Beridinae					
Beris rozkosnyi Kassebeer, 1996	X				
Chorisops tunisiae (Becker, 1915)	X	X	X		
Subfamily Pachygastrinae					
Aspidacantha atra Kertesz, 1916					X
Pachygaster atra Panzer, 1798	X^				
Pachygaster maura Lindner, 1939	X				
Subfamily Clitellariinae					
Adoxomyia flauipes (Fabricius, 1798)		X			
Pycnomalla aterrima Sack, 1912	X	X			
Pycnomalla auriflua (Erichson, 1841)	X	X			
Pycnomalla splendens (Fabricius, 1787)	X	X			
Subfamily Sarginae					
Chloromyia formosa (Scopoli, 1763)	X*	X	X		
Sargus bipunctatus (Scopoli, 1763)			X		
Subfamily Stratiomyinae					
Dicorymbimyia annulatus (Becker, 1906)			X		
Oxycera germanica (Szilady, 1932)		X			
Oxycera morrisii (Curtis, 1833)		X			
Oxycera ochracea (Vaillant, 1950)		X			
Oxycera orientalis (Lindner, 1974)					X
Oxycera pardalina (Meigen, 1822)	X^				
Oxycera rara (Scopoli, 1763)		X			
Oxycera tenebricosa (Vaillant, 1952)		X			
Oxycera torrentium (Vaillant, 1950)		X			
Oxycera terminata Meigen, 1822	X^				
Oxycera trilineata (Linnaeus, 1767)	X*	X			
Peritta melichlora Becker, 1906		X			
Vanoyia tenuicornis Macquart, 1834	X				
Odontomyia disciclara (Séguy, 1929)		X			
Odontomyia alolena (Séguy, 1930)	X				
Odontomyia angulata (Panzer, 1798)	X	X			X
Odontomyia discolor (Loew, 1846)	X	X			
Odontomyia flavissima (Rossi 1790)	X	X	X		
Odontomyia limbata (Wiedemann, 1822)	X*	X	X		
Odontomyia megacephala Olivier, 1812					X
Odontomyia microcera (Séguy, 1930)	X				
Odontomyia xanthopus Bezzi, 1906					X
Oplodontha minuta Fabricius, 1794					X
Oplodontha viridula (Fabricius, 1775)		X			
Stratiomyia africana Szilady, 1941		X			
Stratiomys cenisia Meigen, 1822	X	X	X		X

Specimens	Morocco	Algeria	Tunisia	Libya	Egypt
Stratiomys deserticolor Lindner, 1930					X
Stratiomys hispanica Pleske, 1901		X			
Stratiomys longicornis (Scopoli, 1763)	X	X	X		X
Stratiomys singularior (Harris, 1776)					X
Subfamily Nemotelinae					
Lasiopa benoisti Séguy, 1930	X	X			
Lasiopa manni Mik, 1882			X		
Lasiopa pantherina Séguy, 1930	X				
Nemotelus anchora Loew, 1846		X	X		X
Nemotelus atriceps Loew, 1856	X+	X	X		
Nemotelus beckeri Hauser, 1998		X	X		
Nemotelus candidus Becker, 1906		X			X
Nemotelus carthaginis Becker, 1906			X		
Nemotelus cingulatus Dufour, 1852	X*	X	X		
Nemotelus danielssoni Mason, 1989	X^				
Nemotelus dentatus Becker, 1902					X
Nemotelus lasiops Loew, 1846			X		
Nemotelus latiusculus Loew, 1871	X*	X	X		
Nemotelus longirostris Wiedemann, 1824	X	X	X		
Nemotelus maculiventris Bigot, 1861	X+	X			
Nemotelus marinus Becker, 1902					X
Nemotelus matrouhensis Mohammad, Fadl, Gadalla & Badrawy, 2009					X
Nemotelus nigrifrons Loew, 1846	X*	X	X	X	
Nemotelus niloticus Olivier, 1811					X
Nemotelus notatus Zetterstedt, 1842					X
Nemotelus pantherinus (Linnaeus, 1758)	X				
Nemotelus proboscideus Loew, 1846		X	X	X	
Nemotelus punctiventris Becker, 1902					X
Nemotelus subuliginosus Rozkošný, 1974	X				
Nemotelus ventralis Meigen, 1830	X				
Nemotelus nigrinus Fallen, 1817	X				

Results

Faunistic records

Subfamily BERIDINAE
Genus *BERIS* Latreille, 1802

Beris rozkosnyi Kassebeer, 1996

North African literature records. Morocco: Middle Atlas, Meknès, Ifrane (Kasebber 1996: 155; Woodley 2001: 66).

World distribution. Spain (Woodley 2001: 66).

Genus *CHORISOPS* Rondani, 1856

Chorisops tunisiae (Becker, 1915)

= *Beris tunisiae* Becker, 1915

North African literature records. Morocco, Algeria, Tunisia: La Calle (Woodley 2001: 68).

World distribution. Portugal, Spain (Woodley 2001: 68); Sardinia (Mason et al. 2009: 509-510).

Subfamily PACHYGASTRINAE Loew, 1856

Genus *ASPIDACANTHA* Kertesz, 1916

Aspidacantha atra Kertesz, 1916

North African literature record. Egypt (Lindner 1936: 211; Woodley 2001: 86).

World distribution. Palaearctic: Israel, Turkmenistan. Afrotropical: Ethiopia, Tanzania, Uganda, Zaire, Zimbabwe (Woodley 2001: 86); United Arab Emirates (Hauser 2008: 591–592).

Genus *PACHYGASTER* Meigen, 1803

Pachygaster atra Panzer, 1798

= *Nemotelus ater* Panzer, 179
= *Sargus pachygaster* Fallen, 1817

New record. Morocco, Rif: Daya Mezine (Fig. 5), 1♀, 11/VI/2013, sweep net, Coll. Yimlahi and Belqat.

World distribution. Austria, Belgium, Bulgaria, Czech Republic, England, France, Georgia, Germany, Greece, Hungary, Ireland, Israel, Italy, Netherlands, Poland, Portugal, Romania, Russia, Scotland, Slovakia, Spain, Sweden, Switzerland, Turkey, Ukraine, Wales, Yugoslavia (Woodley 2001: 125).

Pachygaster maura Lindner, 1939

North African literature record. Morocco (Lindner 1939: 314).

World distribution. Portugal, Spain (Woodley 2001: 126).

Figure 5. Habitat of *Pachygaster atra*: Daya Mezine.

Subfamily CLITELLARIINAE
Genus *ADOXOMYIA* Kertesz, 1907

***Adoxomyia flauipes* (Fabricius, 1798)**

= *Stratiomys flauipes* Fabricius, 1798
= *Euparyphus kabylinus* Bigot, 1879b

World distribution. Only known in North African from Algeria: Oran, Tebessa (Lindner 1936: 158–159); Oran (Woodley 2001: 151).

Genus *PYCNOMALLA* Gerstaecker, 1857

***Pycnomalla aterrima* Sack, 1912**

World distribution. This species is known in North Africa only from Morocco: Middle Atlas and Algeria: Tizi s'Tkrine (Séguy 1930: 59); Morocco: Daiet Ahoua (Séguy 1953: 78); Morocco and Algeria (Woodley 2001: 172).

Pycnomalla auriflua (Erichson, 1841)

= *Stratiomys auriflua* Erichson, 1841

World distribution. Known in North Africa only from Morocco: Middle Atlas and Algeria: Soufouloud (Séguy 1930: 59); Morocco, Algeria (Woodley 2001: 172).

Pycnomalla splendens (Fabricius, 1787)

= *Stratiomys splendens* Fabricius, 1787
= *Ephippium rufitarse* Macquart, 1838
= *Pycnomalla splendens* ssp. *jordanica* Lindner, 1974

North African literature records. Morocco (Séguy 1930: 59, 1953: 78); Morocco, Tunisia (Lindner 1936: 149–150); Morocco, Algeria, Tunisia (Woodley 2001: 172).

World distribution. Armenia, Israel, Portugal, Spain (Woodley 2001: 172); Turkey (Üstüner et al. 2002: 23).

Subfamily SARGINAE

Genus *CHLOROMYIA* Duncan, 1837

Chloromyia formosa (Scopoli, 1763)

= *Musca formosa* Scopoli, 1763
= *Nemotelus flavogeniculatus* De Geer, 1776
= *Musca cicur* M. Harris, 1778
= *Musca aurata* Fabricius, 1787
= *Sargus aeneus* Walckenaer, 1802
= *Sargus xanthopterus* Meigen, 1804
= *Sargus azureus* Loew, 1840

New localities. Morocco, Rif: Taghbalout, 1♂2♀♀, 5/IV/2014, sweep net, Coll. Yimlahi and Belqat; Lac Ametrasse (Fig. 6), 1♂, 24/V/2013, Coll. Yimlahi and Belqat, sweep net; Douar Kitane, 1♂, 10/IV/2014, Malaise trap, 1♀, 2/V/2014, sweep net, Coll. Yimlahi and Belqat.

North African literature records. Morocco: Tangier (Becker and Stein 1912: 64), Algeria: M'Rassine (Séguy 1930: 66), Merja Zerga (Pârvu et al. 2006); Morocco, Algeria, Tunisia (Woodley 2001: 189).

World distribution. Nearctic: USA (New York, introduced). Palaearctic, Austria, Bulgaria, Czech Republic, England, France, Germany, Greece, Italy, Poland, Portugal, Romania, Russia, Slovakia, Slovenija, Spain, Sweden, Switzerland, Turkey, Yugoslavia (Woodley 2001: 189); Sardinia (Mason et al. 2009: 508–509).

Figure 6. Habitat of *Chloromyia formosa*: Lac Ametrasse.

Genus *SARGUS* Fabricius, 1798

Sargus bipunctatus (Scopoli, 1763)

= *Musca bipunctata* Scopoli, 1763
= *Sargus reaumuri* Meigen, 1804
= *Sargus reaumurii* Fabricius, 1805
= *Sargus sulphureus* Meigen, 1822
= *Sargus bipunctatus* O. Costa, 1844
= *Chrysochroma fasciatus* Szilady, 1929
= *Geosargus perpulcher* James, 1936

North African literature record. Tunisia (Woodley 2001: 221).

World distribution. Nearctic: Canada (British Columbia), USA (Oregon, Washington). Palaearctic: Albania, Austria, Belgium, Bulgaria, Croatia, Czech Republic, England, France, Georgia, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Poland, Romania, Serbia, Slovakia, Slovenija, Switzerland (Woodley 2001: 221); Sardinia (Mason et al. 2009: 524).

Subfamily STRATIOMYINAE Latreille, 1802
Tribe OXYCERINI Enderlein, 1914
Genus *DICORYMBIMYIA* Woodley 2001

Dicorymbimyia annulatus (Becker, 1906)

= *Oxycera annulata* Becker, 1906

World distribution. Tunisia: Zaghouan, Tunis (Woodley 2001: 240).

Genus *OXYCERA* Meigen, 1803

= *Hermione* Meigen, 1800

Oxycera germanica (Szilday, 1932)

= *Hermione germanica* Szilady, 1932
= *Hermione dorieri* Vaillant, 1950
= *Hermione dorieri* var. *barbarica* Vaillant, 1950

North African literature record. Algeria: Aurès Mountains, Arris (Woodley 2001: 247).

World distribution. France, Germany, Switzerland (Woodley 2001: 247).

Oxycera morrisii (Curtis, 1833)

= *Oxycera ranzonii* Schiner, 1857
= *Hermione muscaria ronzonii* Vaillant, 1950
= *Hermione morrisi* var. *auresi* Vaillant, 1950
= *Hermione morrisi* var. *minuta* Vaillant, 1950

North African literature records. Algeria: vicinity of Alger (Woodley 2001: 249).

World distribution. Austria, Belgium, Denmark, England, France, Germany, Greece, Ireland, Israel, Italy, Spain, Switzerland, Yugoslavia (Woodley 2001: 249).

Oxycera ochracea (Vaillant, 1950)

= *Hermione ochracea* Vaillant, 1950

World distribution. Only known in North Africa from Algeria: Aurès Mountains, Arris, Constantine (Woodley 2001: 249).

***Oxycera orientalis* (Lindner, 1974)**

= *Heraclina orientalis* Lindner, 1974
= *Heraclina stigmosa orientalis* (Lindner & Freidberg, 1978)

North African literature record. Egypt (Badrawy 2006: 252).
World distribution. Israel (Woodley 2001: 249).

***Oxycera pardalina* (Meigen, 1822)**

= *Oxycera amoena* Loew, 1857
= *Oxycera engadinica* Jaennicke, 1866
= *Oxycera calceata* Loew, 1871
= *Hermione sahunica* Séguy, 1934
= *Hermione pardalina* var. *oldenbergi* Lindner, 1938
= *Hermione pardalina* var. *nigrifrons* Szilady, 1941
= *Hermione morrisi* var. *bohemica* Hrbacek, 1945
= *Hermione armata* Vaillant, 1950
= *Hermione pardalina* var. *depressa* Vaillant & Delhom, 1956
= *Hermione pardalina* var. *alticola* Vaillant & Delhom, 1956

New records. Oued Abou Bnar (Fig. 7a, b), 17/V/2014, sweep net, 1♀, 18/V/2014-12/VI/2014, reared, 2♂♂1♀; Oued Majjou (Hafa meqlouba) (Fig. 8a, b), 1♀, 9/IV/2015-15/VI/2015, reared; Oued Achekrade (Fig. 9), 1♀, 31/V/2014-8/VI/2014, reared; Ruisseau Maison forestière (Fig. 10), 2♀♀, 24/IV/2015, sweep net; Cascade Aïn Vittel (Fig. 11), 2♂♂1♀, 17/II/2016-20/IV/2016, reared; Mchacha Aïn Vittel (Fig. 12), 1♂, 17/II/2016-20/IV/2016, reared, Coll. Yimlahi and Belqat.

World distribution. Albania, Armenia, Austria, Belgium, Czech Republic, England, France, Georgia, Germany, Hungary, Ireland, Italy, Netherlands, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Yugoslavia (Woodley 2001: 250).

***Oxycera rara* (Scopoli, 1763)**

= *Musca rara* Scopoli, 1763
= *Musca tardigradus* M. Harris, 1778
= *Stratiomys maculata* Geoffroy *in* Fourcroy, 1785
= *Oxycera pulchella* Meigen, 1822
= *Hermione pulchella* var. *similis* (Vaillant, 1950)

North African literature record. Algeria: Aurès Mountains, Arris (Woodley 2001: 251)

Figure 7. a Habitat of *Oxycera pardalina*: Oued Abou Bnar (from where the substrate is taken for rearing adults) **b** Habitat of *Oxycera pardalina*: Oued Abou Bnar environment.

Figure 8. a Habitat of *Oxycera pardalina*: Oued Majjou (Hafa meqlouba) environment **b** Habitat of *Oxycera pardalina*: Oued Majjou (Hafa meqlouba).

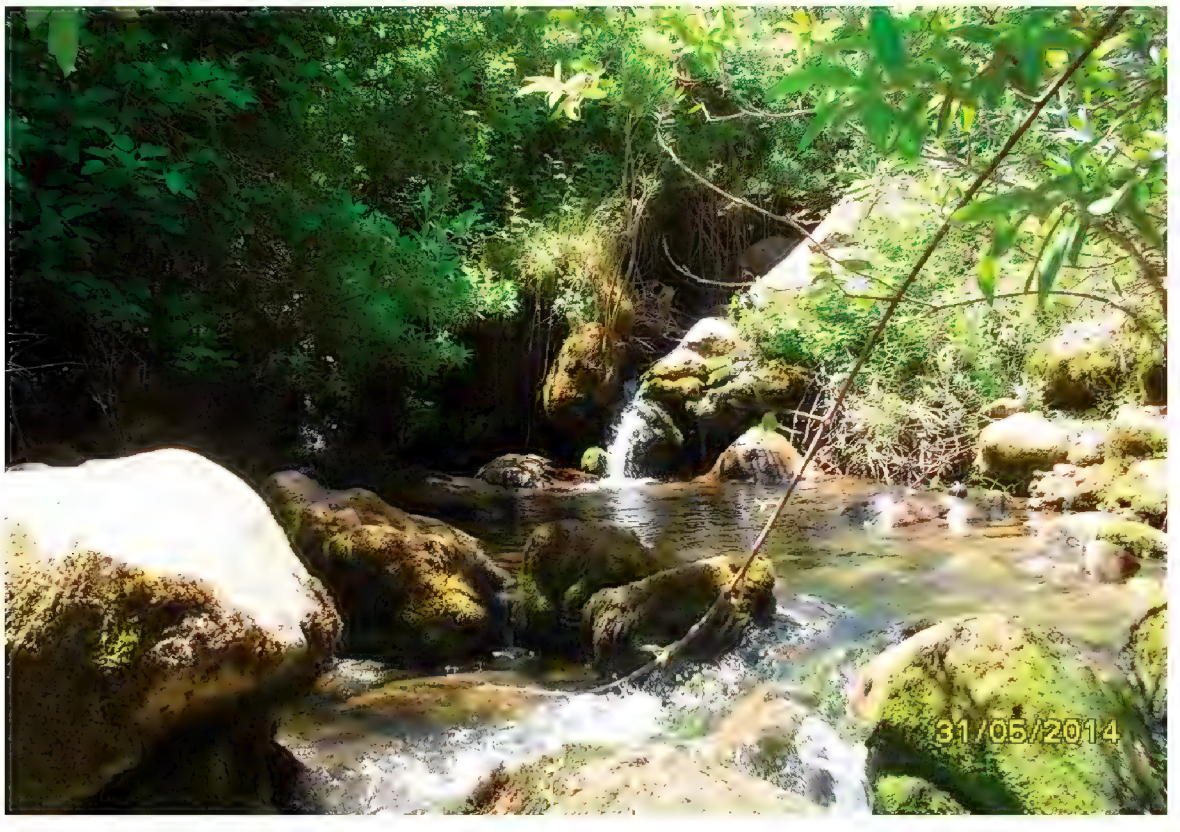


Figure 9. Habitat of *Oxycera pardalina*: Oued Achekrade.

Figure 10. Habitat of *Oxycera pardalina*: Ruisseau Maison forestière environment.

Figure 11. Habitat of *Oxycera pardalina*: Cascade AïnVittel (photograph taken on 17/II/2016, when the material was collected).

Figure 12. Habitat of *Oxycera pardalina*: Mchacha Aïn Vittel (photograph taken on 17/II/2016, when the material was collected).

World distribution. Andorra, Austria, Belgium, Czech Republic, England, France, Germany, Hungary, Italy, Netherlands, Poland, Romania, Slovakia, Slovenija, Spain, Switzerland, Wales, Yugoslavia (Woodley 2001: 251); Sardinia (Mason et al. 2009: 524).

Oxycera tenebricosa (Vaillant, 1952)

= *Hermione tenebricosa* Vaillant, 1952
World distribution. Only known in North Africa from Algeria: Atlas de Blida (Woodley 2001: 252).

Oxycera terminata Meigen, 1822

New records. Morocco, Rif: Cascade Chrafate (Fig. 13a, b), 2♂♂2♀♀, 18/III/2015-9/V/2015, 1♂, 18/III/2015-20/IV/2015, reared, Coll. Yimlahi and Belqat.

World distribution. Austria, Czech Republic, Denmark, England, France, Greece, Hungary, Poland, Romania, Slovakia, Switzerland, Yugoslavia (Woodley 2001: 252).

Figure 13. a Habitat of *Oxycera terminata*: Cascade Chrafate environment **b** Habitat of *Oxycera terminata*: Cascade Chrafate (extraction site of the substrate for rearing adults).

***Oxycera torrentium* (Vaillant, 1950)**

= *Hermione torrentium* Vaillant, 1950

World distribution. Only known in North Africa from Algeria: Atlas of Bilda, La Chiffa, Aurès Mountains (Woodley 2001: 252).

***Oxycera trilineata* (Linnaeus, 1767)**

= *Musca graeca* Pontoppidan, 1763
= *Musca trilineata* Linnaeus, 1767
= *Musca hypoleon* Linnaeus, 1767
= *Stratiomys fasciata* Geoffroy *in* Fourcroy, 1785
= *Oxycera proxima* Loew, 1873
= *Oxycera trilineata* var. *collaris* Brunetti, 1889
= *Hermione trilineata* ssp. *transfasciata* Pleske, 1925
= *Hermione trilineata* ssp. *ferghanensis* Pleske, 1925
= *Hermione ucrainica* Paramonov, 1926
= *Hermione bucheti* Séguy, 1930
= *Hermione trilineata* ssp. *angustistomata* Lindner, 1938

Figure 14. Habitat of *Oxycera trilineata* : Daya Aïn Jdioui.

= *Hermione trilineata* var. *biroi* Szilady, 1941
= *Hermione trilineata* var. *sajoi* Szilady, 1941
= *Hermione trilineata* var. *algira* Vaillant, 1950

New locality. Morocco, Rif: Daya Aïn Jdioui (Fig. 14), 1♂, 28/III/2015-27/V/2015, reared, Coll. Yimlahi and Belqat.

North African literature records. Morocco: Tangier (Becker and Stein 1912: 63, Séguy 1930: 62); Tangier, Algeria: Aurès Mountains, Arris (Woodley 2001: 252).

World distribution. Austria, Belgium, Bulgaria, China, Czech Republic, Denmark, England, Finland, France, Georgia, Germany, Greece, Hungary, Ireland, Israel, Italy, Kyrgyzstan, Latvia, Lithuania, Mongolia, Netherlands, Norway, Poland, Portugal, Romania, Russia, Scotland, Slovakia, Spain, Sweden, Switzerland, Turkey, Ukraine, Uzbekistan, Wales, Yugoslavia (Woodley 2001: 252); Sardinia (Mason et al. 2009: 524); United Arab Emirates (Hauser 2014: 695-697).

Genus *PERITTA* Becker, 1906

Peritta melichlora Becker, 1906

World distribution. Only known in North Africa from Algeria: Biskra, spring at Hammam-Salahin (Woodley 2001: 254).

Genus *VANOYIA* Villeneuve, 1908

***Vanoyia tenuicornis* Macquart, 1834**

= *Oxycera nigra* Macquart, 1834
= *Oxycera longicornis* Dale, 1848
= *Oxycera longicornis* Walker, 1851
= *Vanoyia scutellata* Villeneuve, 1908
= *Vanoyea separata* Kertesz, 1921

North African literature record. Morocco: Tangier (Lindner 1936: 194, Woodley 2001: 254).

World distribution. Belgium, England, France, Ireland, Spain (Woodley 2001: 254).

Tribe STRATIOMYINI Latreille, 1802
Genus *ODONTOMYIA* Meigen, 1803

***Odontomyia alolena* (Séguy, 1930)**

= *Eulalia alolena* Séguy, 1930

World distribution. Only known in North Africa from Morocco: Casablanca, Tangier, Mahaidja, Aïn Leuh (Séguy 1930: 65, Woodley 2001: 269).

***Odontomyia angulata* (Panzer, 1798)**

= *Eulalia angulata* Panzer, 1798
= *Stratiomys angulata* Panzer, 1798
= *Stratiomys vulpina* Panzer, 1798
= *Stratiomys hydropota* Meigen, 1822
= *Odontomyia latifaciata* Macquart, 1834
= *Stratiomys brevicornis* Loew, 1840
= *Stratiomys brevicornis* Loew, 1840
= *Stratiomys ruficornis* Zetterstedt, 1842
= *Odontomyia hydrophila* Loew, 1846

North African literature records. Morocco: Tangier (Becker and Stein 1912: 62); Morocco, Algeria, Egypt (Woodley 2001: 269); Egypt (Badrawy 2006: 253).

World distribution. Afghanistan, Albania, Austria, Belgium, Bulgaria, China, Czech Republic, Denmark, England, Estonia, Finland, France, Germany, Greece,

Hungary, Iran, Israel, Italy, Kazakhstan, Netherlands, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Turkey, Yugoslavia (Woodley 2001: 269); Sardinia (Mason et al. 2009: 521–522).

Odontomyia disciclara (Séguy, 1929)

= *Eulalia disciclara* Séguy, 1929

World distribution. Only known in North African from Algeria: Touggourt (Lindner 1936: 87; Woodley 2001: 273).

Odontomyia discolor (Loew, 1846a)

= *Eulalia* (*Odontomyia*) *discolor* Loew, 1897
= *Odontomyia limbata* Macquart *in* Lucas, 1849

North African literature records. Morocco: Tangier (Becker and Stein 1912: 62); Morocco, Algeria: Constantine (Woodley 2001: 274).

World distribution. Afghanistan, France, Greece, Israel, Italy, Kazakhstan, Kirgizia, Romania, Russia, Spain, Tajikistan, Turkey, Turkmenistan (Woodley 2001: 274); Sardinia (Mason et al. 2009: 522).

Odontomyia flavissima (Rossi 1790)

= *Stratiomys flavissima* Rossi, 1790
= *Stratiomys decora* Wiedemann *in* Meigen, 1822
= *Stratiomys infoscata* Meigen, 1830
= *Odontomyia semiviolacea* Brullé, 1833
= *Odontomyia nigripes* Macquart, 1847
= *Odontomyia limbipennis* Macquart, 1847
= *Odontomyia laufferi* Strobl *in* Czemy & Strobl, 1909

North African literature records. Morocco, Algeria, Tunisia (Woodley 2001: 275).

World distribution. Albania, Austria, Azerbaijan, Bulgaria, Czech Republic, France, Georgia, Greece, Hungary, Israel, Italy, Kazakhstan, Portugal, Romania, Russia, Slovakia, Spain, Switzerland, Syria, Turkey, Yugoslavia (Woodley 2001: 275).

Odontomyia limbata (Wiedemann, 1822)

= *Stratiomys limbata* Wiedemann *in* Meigen, 1822
= *Clitellaria pacifica* Wiedemann *in* Meigen, 1822
= *Opseogymnus flavo signata* A. Costa, 1857

New locality. Morocco, Rif: Lac Ametrasse, 2♂♂1♀, 28/IV/2015; Aïn Sidi Brahim Ben Arrif, 4♂♂, 23/IV/2015; Daya Afrate (Fig. 15), 1♀, 18/IV/2015; Ruisseau Maison forestière, 11♂1♀, 8/V/2014; Aïn El Malâab (Fig. 16a, b), 1♂2♀♀, 17/V/2014; Daya Rmali El Malâab, 1♀, 17/V/2014, Daya Tazia, 2♂♂1♀, 12/V/2015, sweep net, Coll. Yimlahi and Belqat.

North African literature records. Morocco: Tangier (Becker and Stein 1912: 62); Middle Atlas, Tangier, Algeria (Séguy 1930: 65); Morocco, Algeria, Tunisia (Woodley 2001: 278).

World distribution. France, Italy, Portugal, Spain (Woodley 2001: 278).

Odontomyia megacephala Olivier, 1812

World distribution. Only known in North Africa from Egypt (Lindner 1936: 92; Badrawy 2006: 253), Nil river (Woodley 2001: 279).

Figure 15. Habitat of *Odontomyia limbata* and *Nemotelus cingulatus*: Daya Afrate.

Figure 16. a Habitat of *Odontomyia limbata*: Aïn El Malâab **b** Habitat of *Odontomyia limbata*: Aïn El Malâab environment.

Odontomyia microcera (Séguy, 1930)

= *Eulalia microcera* Séguy, 1930

World distribution. Only known in North Africa from Morocco: Meknès (Séguy 1930: 65; Woodley 2001: 279).

Odontomyia xanthopus Bezzi, 1906

North African literature records. Egypt (Woodley 2001: 285; Badrawy 2006: 253).

World distribution. Palaearctic: Israel. Afrotropical: Ethiopia, Malawi (Woodley 2001: 285).

Genus *OPLODONTHA* Rondani, 1863

Oplodontha minuta Fabricius, 1794

= *Oplodontha oasina* Lindner, 1925
= *Eulalia oasina* Lindner, 1925

North African literature records. Egypt: Kharga Oasis, Dakhla Oasis (Lindner 1936: 93–94; Woodley 2001: 287); Egypt (Badrawy 2006: 253).

World distribution. Socotra Island (Tkoč and Rozkošný 2014: 431–437).

***Oplodontha viridula* (Fabricius, 1775)**

= *Stratiomys viridula* Fabricius, 1775
= *Stratiomys canina* Panzer, 1798
= *Stratiomys jejuna* Schrank, 1803
= *Musca jejuna Schrank* in Gistl, 1837
= *Odontomyia dentata* Meigen, 1804
= *Odontomyia holosericea* Olivier, 1811
= *Odontomyia lunata* Olivier, 1811
= *Stratiomys subvittata* Meigen, 1822
= *Stratiomys bimaculata* Meigen, 1835
= *Stratiomys bimaculata* Meigen, 1838
= *Odontomyia personata* Loew, 1846
= *Odontomyia interrupta* Loew, 1846
= *Odontomyia heydenii* Jaennicke, 1866
= *Odontomyia atrata* Verrall, 1909

North African literature record. Algeria (Woodley 2001: 288).

World distribution. Albania, Austria, Belgium, Bulgaria, China, Czech Republic, Denmark, England, France, Finland, Germany, Greece, Hungary, Iraq, Ireland, Israel, Italy, Kazakhstan, Kyrgyzstan, Mongolia, Netherlands, Norway, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Turkey (Woodley 2001: 288); Sardinia (Mason et al. 2009: 522).

Genus *STRATIOMYS* Geoffroy, 1762

***Stratiomyia africana* Szilady, 1941**

World distribution. Only known in North Africa from Algeria: Biskra (Woodley 2001: 296).

***Stratiomys cenisia* Meigen, 1822**

= *Stratiomys flaviventris* Loew, 1846
= *Stratiomyia ahngeri* Pleske, 1901
= *Stratiomyia cypria* Pleske, 1902
= *Stratiomyia kervillei* Villeneuve, 1911
= *Stratiomys hispanica* ssp. *planes* James, 1941

North African literature records. Morocco: Middle Atlas, Meknès, Rabat, Timahdit, Tangier (Séguy 1930: 64); Algeria: Surcouf (Séguy 1930: 64); Algeria, Egypt, Morocco, Tunisia (Woodley 2001: 297); Egypt (Badrawy 2006: 253).

World distribution. Armenia, Austria, Bulgaria, Cyprus, Czech Republic, France, Germany, Hungary, Iran, Israel, Italy, Kazakhstan, Poland, Romania, Russia, Slovakia, Spain, Syria, Turkey, Turkmenistan, Ukraine, Yugoslavia (Woodley 2001: 297).

Stratiomys deserticolor Lindner, 1930

World distribution. Only known in North Africa from Egypt: Siwa Oasis (Woodley 2001: 298); (Badrawy 2006: 254).

Stratiomys hispanica Pleske, 1901

North African literature record. Algeria (Woodley 2001: 300).

World distribution. France, Spain (Woodley 2001: 300).

Stratiomys longicornis (Scopoli, 1763)

= *Hirtea longicornis* Scopoli, 1763
= *Musca tenebricus* M. Harris, 1778
= *Stratiomys strigata* Fabricius, 1781
= *Stratiomys tomentosa* Schrank, 1803
= *Stratiomys villosa* Meigen, 1804
= *Stratiomys nubeculosa* Meigen, 1804
= *Stratiomys thoracica* Fabricius, 1805
= *Stratiomys hirtuosa* Meigen, 1830
= *Stratiomys anubis* (Wiedemann, 1830)
= *Stratiomyia flavifrons* Macquart, 1838
= *Stratiomys strigata* var. *pallida* Loew, 1840
= *Stratiomys lambessiana* (Bigot, 1879) (Lindner 1936: 62)
= *Stratiomys flavo limbata* (A. Costa, 1893) (Lindner 1936: 60)
= *Stratiomyia segnis* (Becker, 1906)
= *Hirtea efflatouni* (Lindner, 1925) (Lindner 1936: 58-59)
= *Stratiomyia* (*Hirtea*) *surcoufi* (Séguy, 1930) (Lindner 1936: 64)
= *Hirtea surcoufi* (Séguy, 1932)
= *Stratiomyia longicornis* ssp. *palaestinensis* Lindner, 1937
= *Stratiomyia* (*Hirtea*) *longicornis* ssp. *flavoscutellata* Lindner, 1940

North African literature records. Morocco: Casablanca (Séguy 1930: 63); Morocco, Algeria: Lambessa, Tunisia (Lindner 1936: 60, 62, 64); Algeria, Egypt, Morocco, Tunisia (Woodley 2001: 301); Egypt (Badrawy 2006: 254).

World distribution. Afghanistan, Albania, Armenia, Austria, Azerbaijan, Belgium, Bulgaria, China, Cyprus, Czech Republic, Denmark, England, France, Germany, Greece, Hungary, Iran, Israel, Italy, Korea, Lithuania, Malta, Mongolia, Netherlands, Poland, Portugal, Romania, Russia, Scotland, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tunisia, Turkey, Yugoslavia (Woodley 2001: 301); Sardinia (Mason et al. 2009: 524).

Stratiomys singularior (Harris, 1776)

= *Musca singularius* Harris, 1776
= *Stratiomys furcata* Fabricius, 1794
= *Stratiomys panthaleon* Fallen, 1817
= *Stratiomys riparia* Meigen, 1822
= *Stratiomys paludosa* Siebke, 1863

North African literature record. Egypt (Badrawy 2006: 254).

World distribution. Armenia, Austria, Belgium, Bulgaria, China, Czech Republic, Denmark, England, Estonia, Finland, France, Germany, Hungary, Iran, Ireland, Italy, Kazakhstan, Lithuania, Mongolia, Netherlands, Norway, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Ukraine, Yugoslavia (Woodley 2001: 301).

Subfamily NEMOTELINAE Kertesz, 1912
Genus *LASIOPA* Brulle, 1832

Lasiopa benoisti Séguy, 1930

World distribution. Only known in North Africa from Morocco: Meknès and Algeria: Boghari (Séguy 1930: 60); Morocco: Meknès, Algeria: Boghari, Bougie (Woodley 2001: 309).

Lasiopa manni Mik, 1882

North African literature records. Algeria: Constantine (Becker and Stein 1912: 63); Tunisia (Woodley 2001: 309).

World distribution. Italy, Turkey (Woodley 2001: 309).

Lasiopa pantherina Séguy, 1930

World distribution. Only known in North African from Morocco: Maharidja (Séguy 1930: 62; Woodley 2001: 309).

Genus *NEMOTELUS* Geoffroy, 1762
Subgenus *Nemotelus* Geoffroy, 1762

Nemotelus anchora Loew, 184624

= *Nemotelus siculus* Jaennicke, 1866
= *Nemotelus persicus* Pleske *in* Lindner, 1937

North African literature records. Algeria, Tunisia (Woodley 2001: 311); Egypt (Badrawy 2006: 252); Egypt: Fayoum (Mohammad et al. 2009: 99)

World distribution. Iran, Israel, Italy, Malta, Russia (Woodley 2001: 311); Sardinia (Mason et al. 2009: 510).

Nemotelus atriceps Loew, 1856

= *Nemotelus longicornis* Lindner, 1937

New record. Morocco: Village Massa (Fig. 17), 11.V.2015, 1♂, sweep net, Coll. Yimlahi and Belqat.

North African literature records. Algeria, Tunisia (Woodley 2001: 312).

World distribution. France, Portugal, Spain (Woodley 2001: 312).

Nemotelus beckeri Hauser, 1998

World distribution. Known in North Africaonly from Algeria and Tunisia: Tabaraka, Khathairie (Hauser 1997: 453; Woodley 2001: 313).

Nemotelus candidus Becker, 1906

World distribution. Knownin North Africa only from Algeria: Hammam-Salahin (Lindner 1936: 122–123), Biskra, Hammam-Salahin (Woodley 2001: 314) and Egypt (Badrawy 2006: 252); Egypt: Dekhela Mariout, Wadi El Natroun (Mohammad et al. 2009: 99–100).

Nemotelus carthaginis Becker, 1906

World distribution. Only known in North Africa from Tunisia (Lindner 1936: 123), Tunisia: Karthago (Woodley 2001: 314).

Figure 17. Habitat of *Nemotelus atriceps*: Village Massa.

Nemotelus cingulatus Dufour, 1852

= *Nemotelus lateralis* Dufour, 1852
= *Nemotelus pulcher* Loew, 1871
= *Nemotelus aemulus* Loew, 1871
= *Nemotelus consimilis* (Becker, 1915)

New locality. Morocco, Rif: Daya Afrate (Fig. 15), 2♂♂, 18/IV/2015, sweep net; Oued El Koub (Figs 18, 19), 1♀, 06/V/2015, Coll. Yimlahi and Belqat.

North African literature records. Algeria, Tunisia (Lindner 1936: 123–124); Algeria, Morocco, Tunisia (Woodley 2001: 314).

World distribution. France, Spain (Woodley 2001: 314).

Nemotelus danielssoni Mason, 1989 (Figs 20, 21, 22, 23)

World distribution. Greece (Woodley 2001: 315).

New record. Morocco: Oued Izelfane (Fig. 24), 8♂♂12♀♀, 25/VI/2013, sweep net, Coll. Yimlahi and Belqat.

Figure 18. Habitat of *Nemotelus cingulatus*: Oued El Koub environment.

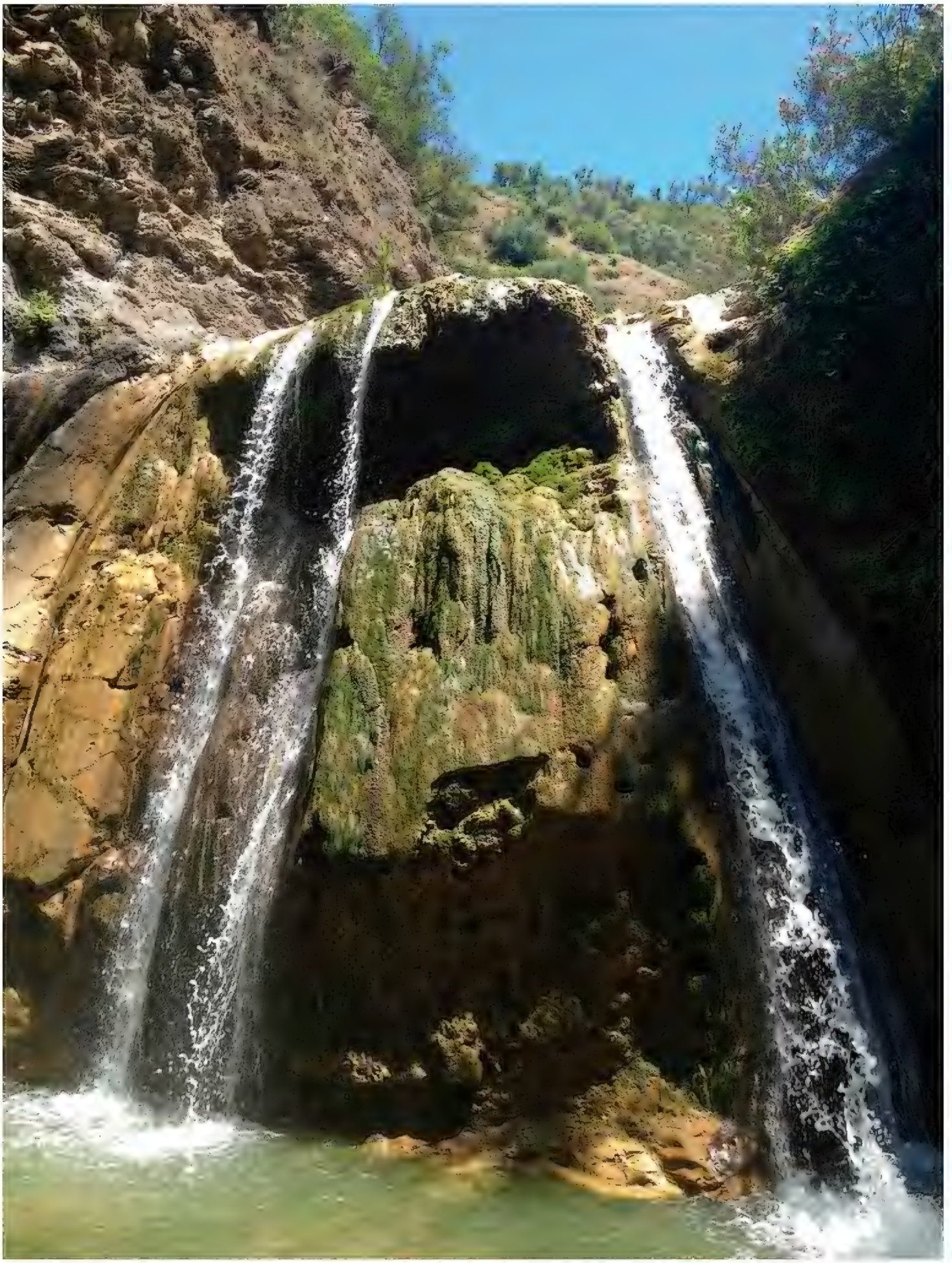


Figure 19. Habitat of *Nemotelus cingulatus*: Oued El Koub.

Figure 20. *Nemotelus danielssoni*: Male adult (dorsal view).

Figure 21. *Nemotelus danielssoni*: Male adult (lateral view).

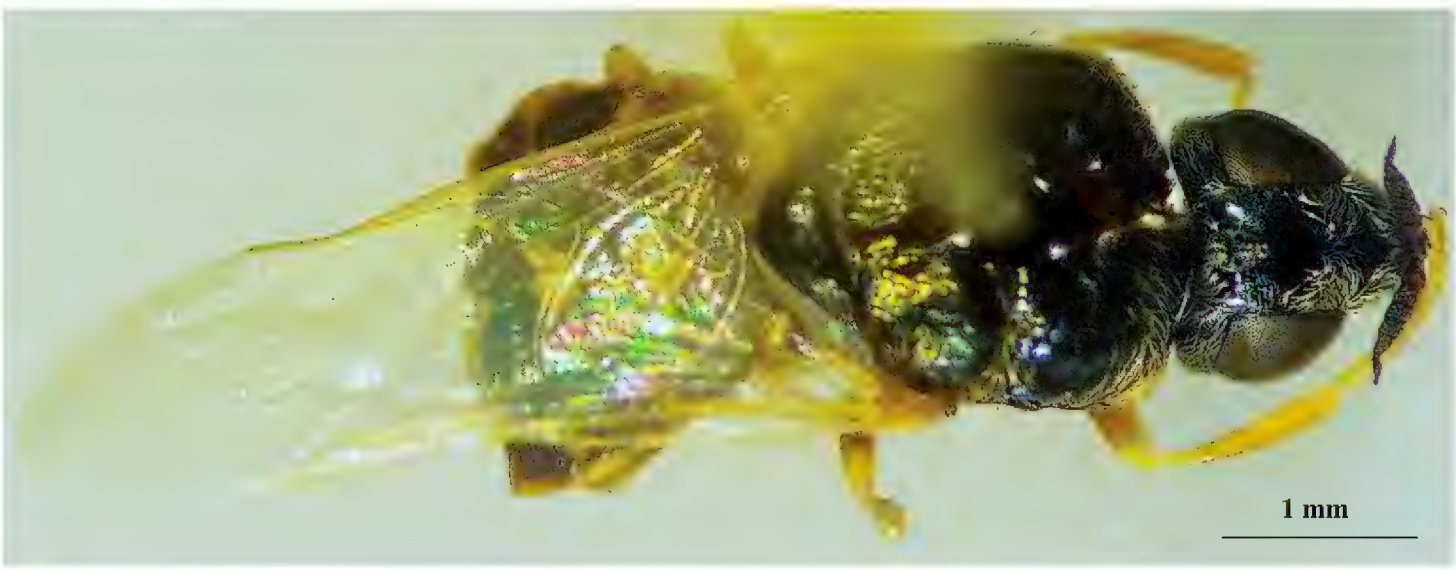


Figure 22. *Nemotelus danielssoni*: Female adult (dorsal view).

Figure 23. *Nemotelus danielssoni*: Female adult (lateral view).

Nemotelus danielssoni was described as a new species only from the male specimen (from Crete Island, Greece). Recently, Mason and Rozkošný (2003) have described the female.

The species is recorded from Izelfane in Morocco. This finding is very interesting, as it represents the first record from North Africa of a supposed endemic species of Greece.

Nemotelus dentatus Becker, 1902

World distribution. Only known in North Africa from Egypt: El Alagto Marg (Lindner 1925), Birket-el-Karun (Woodley 2001: 315); (Badrawy 2006: 252); Coastal strip, Lower Nile, Western desert (Mohammad et al. 2009: 100).

Nemotelus lasiops Loew, 1846

= *Nemotelus striativentris* Lindner, 1937

North African literature record. Tunisia (Woodley 2001: 317).

World distribution. Italy (Woodley 2001: 317); Sardinia (Mason et al. 2009: 512).

Nemotelus latiusculus Loew, 1871

= *Nemotelus cothurnatus* Bigot, 1879
= *Nemotelus cardinalii* Bezzi, 1898
= *Nemotelus perplexus* Becker, 1915
= *Nemotelus freidbergi* Lindner, 1975

New locality. Morocco, Rif: Barrage Moulay Bouchta (Fig. 25), 1♂, 05/IV/2014, sweep net, Coll. Yimlahi and Belqat.

North African literature records. Tunisia (Lindner 1936: 137); Algeria, Morocco, Tunisia (Woodley 2001: 318).

World distribution. Israel, Italy, Spain (Woodley 2001: 318).

Figure 24. Habitat of *Nemotelus danielssoni*: Oued Izelfane.

Figure 25. Habitat of *Nemotelus latiusculus*: Barrage Moulay Bouchta.

Figure 26. Habitat of *Nemotelus maculiventris* (Bigot, 1861): Oued Zandoula.

Nemotelus longirostris Wiedemann, 1824

= *Nemotelus gadensis* Schiner, 1868
= *Nemotelus pilosus* Loew, 1871
= *Nemotelus fuscinervis* Loew, 1871

North African literature records. Morocco: Tangier (Becker and Stein 1912: 62; Séguy 1930: 59); Morocco, Algeria (Lindner 1936: 131); Algeria, Morocco, Tunisia (Woodley 2001: 318).

World distribution. France, Spain (Woodley 2001: 318).

Nemotelus maculiventris Bigot, 1861

= *Nemotelus andalusiacus* Lindner, 1937

New record. Morocco, Rif: Oued Zandoula (Fig. 26), 1♂2♀♀, 06/V/2015, sweep net, coll. Yimlahi and Belqat.

North African literature record. Algeria (Woodley 2001: 318).

World distribution. Italy, Spain (Woodley 2001: 318).

Nemotelus marinus Becker, 1902

World distribution. Only known in North Africa from Egypt (Badrawy 2006: 254); Egypt: Suez (Woodley 2001: 318), Fayed, Ferdan, Ismailia, Wadi Hoff, Wadi El Natroun (Mohammad et al. 2009: 100–101).

Nemotelus matrouhensis Mohammad, Fadl, Gadalla & Badrawy, 2009

World distribution. Only known in North Africa from Egypt (Mohammad et al. 2009: 100–101).

Nemotelus nigrifrons Loew, 1846

= *Nemotelus tomentosus* Becker, 1906

New locality. Affluent Tarmast (Fig. 27), 2♂♂1♀, 26/VI/2013, sweep net, coll. Yimlahi and Belqat.

Figure 27. Habitat of *Nemotelus nigrifrons*: Affluent Oued Tarmast.

North African literature records. Morocco: Tangier (Becker and Stein 1912: 62); Morocco, Algeria, Tunisia (Lindner 1936); Algeria, Libya, Morocco, Tunisia (Woodley 2001: 319).

World distribution. Israel, Italy (Woodley 2001: 319); Sardinia (Mason et al. 2009: 512).

Nemotelus niloticus Olivier, 1811

= *Nemotelus albifacies* Becker, 1902 syn. n.
= *Nemotelus duofasciatus* Woodley 2001
= *Nemotelus fasciatus* Olivier, 1811
= *Nemotelus oasis* Becker, 1906
= *Nemotelus theodori* Lindner, 1974

North African literature records. Algeria: Biskra (Lindner 1936: 117); Egypt: Alexandria (Woodley 2001: 311), Egypt (Badrawy 2006: 254), Dekhela Mariout, Fayid, Fayoum, Gabal Asfer, Dekhela, Ismailia, Mallaha Mariout, Ramleh, Sherbin, Zaranik protectorate (Mohammad et al. 2009: 98–101).

World distribution. United Arab Emirates (Hauser 2008: 598); Sardinia (Mason et al. 2009: 512).

Nemotelus notatus Zetterstedt, 1842

= *Nemotelus brachystomus* Loew, 1846
= *Nemotelus nigroaeneus* Verhoeff, 1891
= *Nemotelus punctiventris* Becker, 1902
= *Nemotelus brachystomus* form *aegyptiacus* (Lindner, 1925)
= *Nemotelus balearicus* Lindner, 1937
= *Nemotelus zernyi* Lindner, 1937

North African literature record. Egypt (Badrawy 2006: 254), Egypt: Coastal strip (Mohammad et al. 2009: 102–103).

World distribution. Austria, Belgium, Denmark, England, Finland, France, Germany, Ireland, Netherlands, Norway, Poland, Spain, Sweden (Woodley 2001: 313); Sardinia (Mason et al. 2009: 515–520); Turkey (Üstüner et al. 2002: 21).

Nemotelus pantherinus (Linnaeus, 1758)

= *Musca pantherina* Linnaeus, 1758
= *Stratiomys albipes* Geoffroy in Fourcroy, 1785
= *Stratiomys marginellus* Thunberg, 1789
= *Musca marginella* Gmelin, 1790
= *Nemotelus nigritus* Meigen, 1804
= *Nemotelus marginellus* Fallen, 1817
= *Nemotelus nigritus* Meigen, 1822
= *Nemotelus fraternus* Loew, 18 46
= *Nemotelus gracilis* Loew, 1846
= *Nemotelus satunini* Pleske in Lindner, 1937
= *Nemotelus zelleri* Pleske in Lindner, 1937
= *Nemotelus albirostris* Szilady, 1941
= *Nemotelus caucasicus* Nartshuk, 1969
= *Nemotelus punctirostris* Lindner, 1974

North African literature record. Morocco: Tangier (Séguy 1930: 59), Morocco (Woodley 2001: 320).

World distribution. Albania, Armenia, Austria, Azerbaijan, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, England, Estonia, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Latvia, Netherlands, Norway, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Tajikistan, Turkey, Yugoslavia (Woodley 2001: 320); Sardinia (Mason et al. 2009: 521).

Nemotelus proboscideus Loew, 1846

= *Nemotelus punctatus* Fabricius, 1794
= *Nemotelus algericus* Jaennicke, 1866

North African literature records. Morocco, Tunisia (Lindner 1936: 139); Algeria, Libya, Tunisia, omitted in Morocco by Woodley (2001: 321).

World distribution. Italy (Woodley 2001: 321).

Nemotelus punctiventris Becker 1902

World distribution. Only known in North Africa from Egypt (Mohammad et al. 2009: 100–101).

Nemotelus subuliginosus Rozkošný, 1974

World distribution. Only known in North Africa from Morocco: Tangier (Woodley 2001: 322).

Nemotelus ventralis Meigen, 1830

World distribution. Only known in North Africa from Morocco (Lindner 1936: 146), Morocco: Essaouira (Woodley 2001: 323).

Subgenus *Camptopelta* (Williston, 1917)

Nemotelus nigrinus Fallen, 1817

= *Nemotelus carneus* Walker, 1849
= *Nemotelus crassus* Loew, 1863
= *Nemotelus unicolor* Loew, 1863
= *Nemotelus carbonarius* Loew, 1869

North African literature record. Morocco (Woodley 2001: 326).

World distribution. Nearctic: Canada, USA. Neotropical: Mexico. Palaearctic: Afghanistan, Austria, Azerbaijan, Belgium, Bulgaria, China, Czech Republic, Denmark, England, Estonia, Finland, Germany, Hungary, Ireland, Latvia, Lithuania, Mongolia, Netherlands, Norway, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Tibet, Ukraine, Yugoslavia (Woodley 2001: 326), Turkey (Üstüner 2010: 110).

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